

# WORKSHOP AGENDA

## 1. Welcome and introduction

(Lew Wade, NIOSH, 8:00 - 8:15 a.m.)

## 2. Update on MSHA Metal/Nonmetal Rule

(George Saseen, MSHA, and Bill Pomeroy, MSHA, 8:15 - 8:30 a.m.)

## 3. Overview of Control Technologies Available to the Underground Mining Industry (Aleksandar Bugarski, NIOSH, 8:30 - 9:15 a.m.)

- A. Low PM-emitting engines
- B. Alternative fuel formulations
- C. Aftertreatment technologies
  - i. Curtailment of gaseous emission
    - (1) Gaseous emissions from diesel engines
    - (2) Diesel oxidation catalytic converters
    - (3) NO<sub>x</sub> aftertreatment
  - ii. Curtailment of particulate matter emissions
    - (1) Definitions of particulate matter
    - (2) Efficiency of diesel particulate filters (DPFs)
    - (3) Secondary emissions
    - (4) DPF regeneration strategies
      - (a) Passive systems
      - (b) Active systems
      - (c) Passive vs. active systems
  - iii. Combination of technologies for curtailment of particulate matter and gaseous emissions

**Break (9:15 - 9:30 a.m.)**

## 4. Diesel Particulate Filters (DPFs) in Underground Mining (9:30 - 11:30 a.m.)

- A. DEEP-sponsored long-term evaluation of the DPFs at Noranda's Brunswick Mining & Smelting Mine (Sean McGinn, McGinn Integration, Inc. - 45 minutes)
- B. DEEP-sponsored long-term evaluation of the DPFs at INCO's Stobie Mine (Joseph Stachulak, INCO Ltd. - 45 minutes)
- C. DPFs in U.S. underground coal mines (Steve 'Skinner' Forbush, Canyon Fuel Co. - 30 minutes)

**Lunch (11:30 a.m. - 1:00 p.m.)**

## 5. Emissions Assisted Maintenance

(1:00 - 2:00 p.m.)

- A. Maintenance of Heavy-Duty Underground Mining Diesel Powered Equipment (Sean McGinn - 30 minutes)
  - i. Importance of maintenance
  - ii. Tools
  - iii. Training
  - iv. Case studies
- B. Maintenance of Heavy-Duty Diesel-Powered Equipment Using Emissions Data (Steve 'Skinner' Forbush - 30 minutes)
  - i. Fuel setting and diesel emissions
  - ii. Maintenance program at Canyon Fuel mines

## 6. Strategy for Selection of Diesel Particulate Filters

(George Schnakenberg, NIOSH, and Jim Angel, MSHA, 2:00 - 3:00 p.m.)

- A. Systematic approach
- B. Gathering information pertinent to deployment of aftertreatment technology
- C. Using gathered information for selecting adequate aftertreatment technology for the application
- D. Acceptance of new technology
- E. Case study
- F. Compliance assistance guide

## 7. Forum (moderated by George Schnakenberg, George Saseen, and Bill Pomeroy,

3:00 - 5:00 p.m.)

- A. Work through several different examples submitted to NIOSH in advance of the workshop by attendees
- B. Open discussion

## 8. Concluding Remarks (5:00 - 5:05 p.m.)

## 9. Networking - Vendors available for discussions

(5:05 - 7:00 p.m.)



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Please complete the registration form on the opposite side and mail to:

**Diesel Emissions Workshop**  
**c/o Rose Ann Crotsley**  
**NIOSH Pittsburgh Research Lab**  
**PO Box 18070**  
**Pittsburgh, PA 15236-0070**

**Fax: 412.386.6780**

**Email: rkc6@cdc.gov**

**Phone: 412.386.6609**

This form may be duplicated for additional registrations. Please print in ink or type, and return to the above address.

For more information call Aleksandar Bugarski - 412.386.5912.

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## REGISTRATION FORM

### Diesel Emissions and Control Technologies in Underground Metal and Nonmetal Mines

Please check the event(s) you plan to attend:

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**February 27, 2003**

Millennium Hotel Cincinnati  
150 West Fifth Street  
Cincinnati, OH 45209  
Phone: 513.352.2100  
Fax: 513.352.2148  
Reservations: 866.866.8086  
Email: cinti@mhrmail.com

☐

**March 4, 2003**

Hilton Salt Lake City Center  
255 South West Temple  
Salt Lake City, UT 84101  
Phone: 801.328.2000  
Fax: 801.328.4888  
Reservations: 800.445.8667  
www.hilton.com

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Name (Last, First, MI)

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## ANNOUNCEMENT

The National Institute for Occupational Safety and Health is sponsoring two 1 day workshops to be held in Cincinnati, OH on February 27, 2003, and Salt Lake City, UT, on March 4, 2003.

The topic will be the implementation of control technologies that are capable of reducing miner exposure to particulate matter and gaseous emissions from diesel-powered vehicles and are presently available to the U.S. underground metal and nonmetal mining industry.

The workshops are designed to help managers, maintenance personnel, safety and health professionals, and ventilation engineers tackle the multifaceted task of applying control technologies, particularly diesel particulate filters, in their mines.

Major issues covered by the workshop will be current regulations, state-of-the art control technologies and maintenance practices, and strategies for the selection and use of the various types of diesel particulate filters. Industry speakers will present their first-hand experiences with the implementation of diesel particulate filters in underground mines.

The workshops will provide an excellent forum for honest discussion and the open exchange of ideas and experiences relative to the use of diesels in underground mines. Attendees are encouraged to actively participate by bringing their questions, problems, and experiences to the workshop.

Major vendors for control technologies and engines will participate in the workshop.



### Diesel Emissions and Control Technologies in Underground Metal and Nonmetal Mines

Cincinnati, OH  
February 27, 2003

Salt Lake City, UT  
March 4, 2003



NIOSH-Sponsored Workshop